CLAIMS

1. A particulate filter for diesel engines, comprising a metal shell or casing defining a cavity with an intake pipe and an outlet pipe, and a filtering body made of ceramic foam set in the path of communication between said intake pipe and said outlet pipe,

wherein said filtering body is made up of a plurality of separate elements made of ceramic foam and having a substantially plane and elongated shape, which are set about a longitudinal axis of the shell in such a way as to define, inside the shell, an inner chamber set inside the array of filtering elements and at least one outer chamber set outside the array, the said chambers respectively communicating with said intake pipe and with said outlet pipe, or vice versa, in such a way that, during use, the flow of the engine exhaust gases that traverses said shell passing from the intake pipe to the outlet pipe (or vice versa) is forced to traverse the aforesaid filtering elements, thus assuming a component of radial velocity with respect to the longitudinal axis of the shell.

2. The filter according to Claim 1, wherein two concentric arrays of filtering elements are

provided.

3. The filter according to Claim 2, wherein the filtering elements of each array are four in number and are set orthogonally to one another and in pairs facing one another, according to the sides of a rectangle.

4. The filter according to Claim 3, wherein the filtering elements of two adjacent sides rest along their adjacent edges on radial supports that project inwards from a cylindrical wall of the shell.

5. The filter according to Claim 4, wherein a ceramic pad is set between each radial support and the elements resting thereon.

6. The filter according to Claim 4, wherein said cylindrical wall is connected at one end to a bell-like structure having a neck that defines the aforesaid intake pipe (or outlet pipe), said structure being closed at its opposite end by a diaphragm which has peripheral openings that force the flow of gas entering (or exiting) the shell to pass into the outer chamber (A) set outside the filtering elements, the opposite end of the cylindrical wall being closed by a diaphragm which has a central neck defining the outlet (intake) pipe and communicating with the inner chamber (B) set

inside the array of filtering elements.

7. The filter according to Claim 4, wherein the arrays of filtering elements define, outside them, four chambers (A) which are independent of one another.

8. The filter according to Claim 4, wherein the adjacent and the facing elements of the two arrays define between them four intermediate chambers (C) which are independent of one another.

9. The filter according to any one of the preceding claims, wherein each filtering element is obtained with a process according to one or more of the claims of the international patent application WO00/69542.

The foregoing substantially as described and illustrated and for the purposes herein specified.